



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,510	04/30/2001	James A. Bisher JR.	A-6684	2086
5642	7590	11/20/2007	EXAMINER	
SCIENTIFIC-ATLANTA, INC.			SHANG, ANNAN Q	
INTELLECTUAL PROPERTY DEPARTMENT			ART UNIT	PAPER NUMBER
5030 SUGARLOAF PARKWAY			2623	
LAWRENCEVILLE, GA 30044				

NOTIFICATION DATE	DELIVERY MODE
11/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

Office Action Summary	Application No.	Applicant(s)	
	09/845,510	BISHER ET AL.	
	Examiner	Art Unit	
	Annan Q. Shang	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 31 August 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,4,6-17,19-23,26-39,41-45 and 49-55 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,4,6-17,19-23,26-39,41-45 and 49-55 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application
6) Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 4, 6-17, 19-23, 26-39 and 41-44 have been considered but are moot in view of the new ground(s) of rejection. The amendment to the claims necessitated the new ground(s) of rejection discussed below.

With respect to claims 45 and 49-55 rejected under 35 U.S.C. 102(e) as being anticipated by **Dyer et al (6,305,019)**, applicant argues that Dyer system is "directed towards a system for transmitting a VOD presentation to a requesting subscriber. This is inherently a unicasted program, not a mulitcasted program..." (see page 11+ of Applicant's Remarks).

In response, Examiner disagrees. Examiner notes applicant's arguments, however, Dyer discloses a content delivery system that employs two kinds of multicast applications models: a broadcast-like multicast that sends data (VOD and other content) to a very large number of destinations and a narrowcast (multicast) that sends data to a fairly small group of subscribers. Dyer further discloses pointcast (unicast) that sends data to a subscriber. The server monitors subscribers request and controls the outputs of the multi-modulator to stream requested data accordingly to a subscriber (pointcast), small group of subscribers (narrowcast) and a large group of subscribers (multicast), using a modulator or combining subsets of modulators as needed (figs.1, 2, 6, col.4, lines 12-26 and line 31-59, col.6, line 37-col.7, line 29, line 48+, col.8, lines 27-67, col.9, lines 26-65, col.11, line 43-53 and col.16, lines 32-63). Hence applicant's arguments are

not persuasive. The 102(e) rejection using Dyer is proper, meets all the claim limitations as discussed below in the office action. **This office action is made final.**

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 45 and 49-55 are rejected under 35 U.S.C. 102(e) as being anticipated by **Dyer et al (6,305,019)**.

As to claim 45, note the **Dyer** reference figures 1-3 and 6, discloses system for interactively distributing information services having a remote session manager and further discloses a method for providing a multicast of a packet, which is included in a transport stream, in a digital network, the method comprising:

An input port of a multi-modulator (Remote Video Session Manager 'RSM' 106 or 616) adapted to receive the transport stream having a plurality of PID streams included therein (figs.1, 2, 6, col.4, line 31-59);

Determining (Information Server 102/RSM-106 'IS/RSM' 102/106) from a table whether a given packet of the plurality of packets is a multicast packet or a unicast

packet, a plurality of modulators in communication with the input port, where at least one modulator of the plurality of modulators is adapted to modulate and transmit a subset of the plurality of PID streams therefrom, where the plurality of modulators includes a first modulator and a second modulator, the first modulator transmitting a first plurality of the plurality of PID streams therefrom, the second modulator transmitting a second plurality of the plurality of PID streams therefrom, the first and second plurality of PID streams are the same (figs.1, 2, 6, col.4, lines 12-26 and line 31-59, col.6, line 37-col.7, line 29, line 48+, col.8, lines 27-67, col.9, lines 26-65, col.11, line 43-53 and col.16, lines 32-63), not that subsets of DVMs are simultaneously combined for transmitting (multicast or narrowcast) of data to subscribers.

As to claim 49, Dyer further discloses where the plurality of packets of the given PID stream have a common PID value and the plurality of packets had a different common PID value when received in the input port (col.7, lines 48-67, col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 50, Dyer further discloses where the received transport stream includes a given PID stream that consists of a plurality of packets having a first common PID value associated therewith, the plurality of packets have a second common PID value associated therewith when they are modulated and transmitted from at least one modulator of the plurality of the modulators (col.7, lines 48-67, col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+)

As to claims 51-52, Dyer further discloses where the plurality of PID streams received in the input port includes a first given PID stream having a plurality of packets

with a first common PID value associated and further includes a second input port adapted to receive a second transport stream having a second plurality of PID streams included therein, the second plurality of received PD streams includes a second given PID stream having a plurality of packets with a second common PID value associated therewith; and wherein at least one modulator of the plurality of modulators modulates and transmits there from the plurality of packets of the first given PID stream and the plurality of packets of the second given PID stream, where the plurality of packets of the second given PID stream have a third common PID values associated therewith when the plurality of packets are transmitted, and second and third common PID values are different (col.7, lines 48-67, col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 53, Dyer further discloses wherein the at least one modulator is a plurality of modulators (col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 54, Dyer further discloses where at least one modulator of the plurality of modulators is a radio frequency modulator (col.8, line 27-67 and col.9, line 26-col.10, line 1+)

As to claim 55, Dyer further discloses where the radio frequency modulator is a QAM modulator (col.8, line 27-67 and col.9, line 26-col.10, line 1+).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4, 6-17, 19-23, 26-39, 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dyer et al (6,305,019)** in view of **Du et al (6,088,346)**.

As to claim 1, note the **Dyer** reference figures 1-3 and 6, discloses system for interactively distributing information services having a remote session manager and further discloses a method for providing a multicast of a packet, which is included in a transport stream, in a digital network, the method comprising:

Receiving at an input port of a multi-modulator (Remote Video Session Manager 'RSM' 106 or 616) the transport stream having a plurality of packets included therein and a plurality of PID streams (figs.1, 2, 6, col.4, line 31-59);

Determining (Information Server 102/RSM-106 'IS/RSM' 102/106) from a table whether a given packet of the plurality of packets is a multicast packet or a unicast packet, wherein a multicast packet is designated for transmission from a plurality of modulators included in the multi-modulator and a unicast packet is designated for transmission from only one modulator of the plurality of modulators (col.4, lines 12-26 and line 31-59, col.6, line 37-col.7, line 29, line 48+ and col.8, lines 27-67);

Associating (IS/RSM 102/106) a modulator identifier with each packet, where the modulator identifier identifies each modulator from which the packet is to be transmitted; processing each packet prior to transmission from one or more of the plurality of modulators; copying the determined multicast packets into modulators from which the multicast packet is to be transmitted (col.4, lines 12-26 and line 31-59, col.6, line 37-col.7, line 29, line 48+ and col.8, lines 27-67);

Appending (IS/RSM 102/106) a data unit header to each packet and copied packet, where the data unit header associates the packet with the transmitting modulator; providing each packet and copied packet to a buffer in accordance with the data unit header; stripping the data unit header from each packet and copied packet from one the plurality of modulators (col.4, lines 12-26 and line 31-59, col.6, line 37-col.7, line 29, line 48+ and col.8, lines 27-67).

Dyer teaches, receiving user requests, recalling programs from memory (disk drive array, an off-line storage system such as an optical disk library, etc.), packetizing and pre-packetizing data and streams data, multicast, narrowcast or pointcast, based a determination of user requests (figs.1, 2, 6 and col.9, lines 26-65, col.11, line 43-53 and col.16, lines 32-63).

Dyer fails to explicitly teach copying the determined multicast packets depending upon how many of the plurality of modulators from which the multicast packet is to be transmitted.

However, **Du** reference, discloses that when a multicast connection is required of a cell (packet), the packet is copied in accordance with the number of connections

defined by the multicast connection and written into a respective buffer memory (col. 11, lines 19-22). Furthermore, the claimed step of "providing each modulator identified by the modulator identifier with a copy of the given packet, where each copy has a common output PID value associated therewith" is met inherently by the fact that the packet is a copy, therefore indicating that it would have the same PID and the fact that the Dyer reference teaches providing the packets to the modulators based on the routing table, which determines the modulator assigned to each individual modems.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to copy the packets that are multicast packets, in order to allow multicasting over multiple modulators.

As to claim 4, Dyer further discloses where the processing includes encrypting the given packet (col.3, lines 13-25 and col.9, line 26-col.10, line 12).

As to claim 6, Dyer further teaches all of that which is discussed above with regards to claim 1, but fail explicitly teach first buffer is a multicast buffer for storing multicast packets, and wherein a second buffer is a unicast buffer for storing unicast packets.

However, Du further discloses the use a buffer for storing unicast packets and a buffer for storing multicast packets before transmission (col. 11, lines 14-25).

Therefore it would have been obvious to one of ordinary skill in the ad at the time of the invention to use buffer memories for storing packets, in order to modify the packets and transmit the packets accordingly.

As to claim 7, Dyer further teaches receiving a message indicating that a particular modulator of the plurality of modulators is ready to receive a packet for transmission and sending a packet from one of the multicast buffer or unicast buffer to the particular modulator, where the data unit header associated with the sent packet identifies the particular modulator (col.9, line 26-col.10, line 25 and line 54+), but fails to explicitly teach unicast buffer and multicast buffer, which is met as previously discussed with respect to the rejection of claim 6.

As to claim 8, Dyer fails to explicitly teach, a plurality of buffers include a plurality of unicast buffers, each unicast buffer is associated with a given modulator of the plurality of modulators and is adapted to store unicast packets that are for transmission from the given modulator associated with the unicast buffer, and the plurality of buffers includes a multicast buffer for storing multicast packets therein.

However, Du further discloses a buffer for storing unicast packets and a buffer for storing multicast packets before transmission (col.11, lines 14-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use buffer memories for storing packets, in order to modify the packets transmit the packets accordingly.

As to claim 9, Dyer teaches all of that which is discussed above with regards to claim 8, but fails to explicitly teach determining whether to check the unicast buffer associated with the particular modulator for a unicast packet for transmission from the particular modulator or to check the multicast buffer for a multicast packet, responsive to determining to check the associated unicast buffer, retrieving from the associated

unicast buffer the given packet when there is a unicast packet stored therein, and responsive to determining to check the multicast buffer, determining whether a packet stored in the multicast buffer is for transmission from the particular modulator and retrieving the given packet from the multicast buffer when the given packet is determined to be for transmission from the particular port.

However, Du further discloses a buffer for storing unicast packets and a buffer for storing multicast packets before transmission (col.11, lines 14-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use buffer memories for storing packets, in order to modify the packets and transmit accordingly.

As to claim 10, Dyer further teaches associating a count register of a plurality of count registers with each modulator of the plurality of modulators, incrementing the count register associated with the particular modulator indicated by the message, and when a packet is retrieved, decrementing each count register associated with a modulator identified by the modulator identifier associated with the retrieved given packet (col.9, line 26-col.10, line 25).

As to claim 11, Dyer teaches all of that which is discussed above with regards to claim 10, but fails to explicitly teach unicast buffer is a first-in-first-out buffer, and when the given packet is retrieved from the given unicast buffer the given packet is the current first-in packet, and wherein when the given packet is retrieved from the multicast buffer the given packet is determined at least in part by the current status of the plurality of

count registers and at least in part by the modulator identifier associated with the given packet.

However, Du further discloses buffers for unicast and multicast transmission and also proposes that newly entered packets overwrite any available packets (col.11, lines 50-51), indicating that the buffer functions as a first-in-first-out (FIFO) buffer, as is common in buffer technology.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use FIFO buffers, in order to sequentially process data for the unicast and multicast buffers.

As to claims 12-13, Dyer fails to explicitly teach the determination for checking the multicast buffer or the associated unicast buffer is based at least in part on the current status of the multicast buffer and the associated unicast buffer or the determination for checking the multicast buffer or the associated unicast buffer is based at least in part on prior determinations.

However, Du further discloses a buffer for storing unicast packets and a buffer for storing multicast packets before transmission (col.11, lines 14-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use buffer memories for storing packets, in order to modify the packets and transmits the packets accordingly.

As to claim 14, Dyer further discloses where at least one modulator of the plurality of modulators is a radio frequency modulator (col.8, line 27-67 and col.9, line 26-col.10, line 1+)

As to claim 15, Dyer further discloses where the radio frequency modulator is a QAM modulator (col.8, line 27-67 and col.9, line 26-col.10, line 1+).

As to claim 16, Dyer further discloses wherein the packets of the transport stream include packets conforming to MPEG protocols, and depending upon a management field in the data unit header, the given packet has a first PID when it is received and a second PID when it is transmitted, where the second PID is different from the first PID, wherein the management field includes information regarding PID remapping of the first PID to the second PID (col.7, lines 48-67).

As to claim 17, Dyer further discloses receiving a second transport stream at a second input port, the second transport stream including a plurality of packets; extracting from the first and second transport streams each packet that is to be transmitted from at least one modulator of the plurality of modulators; and sorting extracted packets into a plurality of groups, the plurality of groups including a multicast group that includes multicast packets from the first and second transport streams and at least one unicast group that includes unicast packets from the first and second transport streams (col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 19, Dyer further discloses wherein the at least one unicast group is a plurality of unicast groups, each unicast group is associated with a given modulator of the plurality of modulators, and where the data unit header identifies the given modulator of the plurality of modulators from which the unicast group is transmitted (col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 20, Dyer further discloses wherein the first and second transport streams include packets that conform to MPEG protocols (col.7, lines 48-67).

As to claim 21, Dyer further discloses wherein at least one packet of the first transport stream has a first PID value associated therewith and at least one packet of the second transport stream has a second PID value associated therewith, and wherein the first Pm value and the second Pm value are the same value (col.7, lines 48-67,col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 22, Dyer further discloses wherein when a packet conforming to MPEG protocols is received the packet has a first PID value associated therewith, and the packet has a second PID value associated therewith when the packet is transmitted and when the packet is a multicast packet (col.7, lines 48-67,col.8, lines 27-67, col.9, line 26-col.10, line 1+ and col.15, line 42-col.16, line 1+).

As to claim 23, the claimed "An apparatus in a digital network that receives a transport stream and transmits a plurality of transport streams, the apparatus comprising..." is composed of the same structural elements that were discussed with respect to the rejection of claim 1.

Claims 26-35 are met as previously discussed with respect to claims 6-13.

Claim 36 is met as previously discussed with respect to claim 14.

Claim 37 is met as previously discussed with respect to claim 15.

Claim 38 is met as previously discussed with respect to claim 16.

Claim 39 is met as previously discussed with respect to claim 17.

Claim 40 is met as previously discussed with respect to claim 18.

Claim 41 is met as previously discussed with respect to claim 19.

Claim 42 is met as previously discussed with respect to claim 20.

Claim 43 is met as previously discussed with respect to claim 21.

Claim 44 is met as previously discussed with respect to claim 22.

Conclusion

6. Feuer et al (7,027,733) disclose delivering multicast services on a wavelength division multiplexed network using configurable four-port wavelength selective crossbar switch.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q. Shang** whose telephone number is **571-272-7355**. The examiner can normally be reached on **700am-400pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Christopher S. Kelley** can be reached on **571-272-7331**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the **Electronic Business Center (EBC) at 866-217-9197 (toll-free)**. If you would like assistance from a **USPTO Customer Service Representative** or access to the automated information system, **call 800-786-9199 (IN USA OR CANADA) or 571-272-1000**.



Annan Q. Shang